

# Haylie N. Mikulak

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## EDUCATION

### **Doctor of Philosophy in Earth System Science**

May 2025

Auburn University

Cumulative GPA: 4.0 on a 4.0 scale

### **Master of Science in Geography**

December 2019

University of Georgia

Cumulative GPA: 3.92 on a 4.0 scale

### **Bachelor of Science in Meteorology/Climatology**

May 2017

University of Nebraska-Lincoln

Minors: Mathematics, Physics

Cumulative GPA: 3.638 on a 4.0 scale

## EXPERIENCE

### **Co-Instructor of Record**

August 2024 - Present

Department of Geosciences, Auburn University, Auburn, AL

- Co-leading a lecture section of up to 96 students for an Introductory Weather and Climate course
  - Creating course materials including lectures and assignments
- Holding office hours to assist students with questions
- Developing exams to assess students on their progress and comprehension of material

### **Substitute Teacher**

December 2023 - Present

Spotswood Board of Education, Spotswood, NJ

- Maintain a safe and orderly classroom environment by enforcing school rules and regulations
- Provide guidance and assistance to students with their assignments and projects, fostering academic growth and development
- Follow lesson plans provided by absent teachers, ensuring continuity in student learning and minimizing disruptions in the classroom

### **Geosciences Student Excellence and Accountability Committee Graduate Assistant** August 2023 - Present

Formerly Department Diversity, Equity, and Inclusivity Graduate Assistant

Department of Geosciences, Auburn University, Auburn, AL

- Assist in planning and coordinating events facilitated by G-SEAC
- Coordinate and moderate one graduate student town halls per semester to gain input from graduate students about G-SEAC tasks as well as department climate and culture
- Design and conduct department climate surveys to faculty and students once every year and work with G-SEAC and department chair to make actionable plan and develop new initiatives based on the survey results
- Assist Graduate Program Officer to update the Graduate Student Handbook on student training, professional development, and issues
- Assist in outreach to HBCUs, K-12 schools, local communities, and alumni to build new collaborations and partnerships

**National Science Foundation Research Traineeship Climate Resilience Trainee** August 2021 - Present

Department of Geosciences, Auburn University, Auburn, AL

Advisor: Karen McNeal

- Conducting interdisciplinary research to better understand and communicate climate hazards and resilience
- Attending a series of workshops to learn about and better implement structured decision-making approaches
- Participating in an internship opportunity with stakeholders to address real-world problems

**Environmental Intelligence Analyst** September 2019 - July 2021

Crisis24 formerly WorldAware, Annapolis, MD

- Serving as a subject matter expert for environment-related events
- Forecasting and monitoring environmental events in real time across the globe to inform clients for travel plans or possible impacts to assets
- Writing blogs and holding webinars/podcasts to advise clients of environmental disasters with significant impacts and how to prepare for events
- Conducting trainings for other employees on monitoring and forecasting natural disasters

**Graduate Research Assistant** January 2018 - July 2019

Department of Geography, University of Georgia, Athens, GA

Advisor: Thomas Mote

- Assisting with research to aide in the progression of two scientific grant projects
  - Extreme snowmelt runoff events in the eastern United States
  - Low frequency atmospheric circulation-driven melt events in the high latitudes
- Experience working with large amounts of atmospheric data and Python coding
- Assisting with presentation of findings for conferences and project updates

**Graduate Teaching Assistant** August 2017 - May 2019

Department of Geography, University of Georgia, Athens, GA

- Leading a laboratory section of up to 30 students for three different courses
  - Introduction to Weather and Climate
  - Weather Analysis and Forecasting
  - Synoptic Meteorology and Climatology
- Holding office hours to assist students with questions
- Assessing students on their progress and comprehension of material

**Research Intern** May 2017 - July 2017

Cooperative Institute for Climate Science, Geophysical Fluid Dynamics Laboratory, Princeton University, NJ

Advisors: Sarah Kapnick and Salvatore Pascale

- Granted a Public Trust Security Clearance
- Experience working with large amounts of climate model data and Python coding
- Research involving the impact of changes in climate on corn, wheat, and soybean shipping
- Presentation of findings to GFDL employees

## **Intern**

April 2016 - April 2017

High Plains Regional Climate Center, Lincoln, NE

- Posting weekly drought updates for the High Plains Region
- Preparing data requests and the retrieval of climate information for customers/stakeholders
- Aiding technical and research staff members on projects

## **Undergraduate Researcher**

June 2016 - April 2017

Undergraduate Creative Activities and Research Experience (UCARE) Program

Advisor: Mark Anderson

- Investigating atmospheric conditions during changes in satellite derived sea ice and snow coverage in the Arctic
- Attending seminars regarding information on graduate school and conducting research
- Presenting findings at a research fair in April 2017

## **Undergraduate Research Assistant**

October 2014 - May 2015

Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln, Lincoln, NE

Advisor: Jun Wang

- Editing other students' research papers on a variety of topics
- Examining satellite data in order to study cloud development and air pollution over China

## **PUBLICATIONS**

**Mikulak H.** and K.S. McNeal. Factors Influencing Sense of Belonging During Undergraduate Atmospheric Science Studies. (In Review)

**Mikulak H.** and K.S. McNeal. Improving Sense of Belonging During Undergraduate Atmospheric Science Studies. (In Preparation)

Wachowicz, L., **H. Mikulak**, Z. Suriano, T. Mote, and M. Warren. Snow Ablation in the Great Lakes Region: Associated Synoptic-Scale Circulation and Teleconnections. (In Preparation)

Wachowicz, L., **H. Mikulak**, G. Kooperman, E. Niederman, and T. Mote. Historical and Projected Future Changes in Snowfall to Total Precipitation Ratio in the Eastern United States. (In Preparation)

## **PRESENTATIONS**

**Mikulak H.** and K.S. McNeal: Understanding Undergraduate Atmospheric Science Students' Sense of Belonging. Presented at: *Earth Educators Rendezvous*, July 2024, Philadelphia, PA (Poster Presentation).

**Mikulak H.**, K.S. McNeal, and M. Partyka: Climate Change and Extreme Weather Perceptions of Southeast US Oyster Farmers. Presented at: *Auburn University Climate and Water Symposium*, March 2024, Auburn, AL (Poster Presentation).

**Mikulak H.** and K.S. McNeal: Understanding Atmospheric Science Students' Sense of Belonging. Presented at: *University College Dublin School of Mathematics and Statistics Post Graduate Workshop*, March 2024, Belfield, Ireland (Oral Presentation).

**Mikulak H.** and K.S. McNeal: Understanding Atmospheric Science Undergraduate Students' Sense of Belonging. Presented to: *University College Dublin School of Mathematics and Statistics Math Education Research Group*, February 2024, Belfield, Ireland (Oral Presentation).

**Mikulak H.** and K.S. McNeal: Improving Atmospheric Science Undergraduate Departments' Culture and Climate by Increasing Students' Sense of Belonging. Presented at: *Fifth Symposium on Diversity, Equity, and Inclusion, American Meteorological Society*, January 2024, Baltimore, MD (Oral Presentation).

**Mikulak H.**, H. Cashwell, R.H. Humphrey, A.J. Drager, and D. Kopacz: Assessing the Barriers to Retention in Atmospheric Science Undergraduate Programs. Presented at: *33<sup>rd</sup> Conference on Education, American Meteorological Society*, January 2024, Baltimore, MD (Oral Presentation).

- Mikulak H.**, K.S. McNeal, and M. Partyka: Southeast US Oyster Farmers' Perceptions of Climate Change and Extreme Weather Events. Presented at: *23<sup>rd</sup> Annual Student Conference, American Meteorological Society*, January 2024, Baltimore, MD (Poster Presentation).
- Mikulak H.** and K.S. McNeal: Factors Influencing Sense of Belonging During Undergraduate Atmospheric Science Studies. Presented at: *European Science Education Research Association Summer School*, July 2023, Neustadt an der Weinstrasse, Germany (Poster Presentation).
- Mikulak H.** and K.S. McNeal: Factors Influencing Sense of Belonging During Undergraduate Atmospheric Science Studies. Presented at: *European Science Education Research Association Summer School*, July 2023, Neustadt an der Weinstrasse, Germany (Oral Presentation).
- Mikulak H.** and K.S. McNeal: Students' Sense of Belonging During Undergraduate Atmospheric Science Studies and Its Influence on Career Trajectory. Presented at: *Auburn University College of Liberal Arts Inclusive Excellence Conference*, April 2023, Auburn, AL (Oral Presentation).
- Mikulak H.**, K.S. McNeal, and M. Partyka: Accessibility Differences and Climate Change Perceptions of Oyster Farmers in Alabama. Presented at: *Auburn University Climate and Water Symposium*, March 2023, Auburn, AL (Poster Presentation).
- Mikulak H.** and K.S. McNeal: Undergraduate Students' Sense of Belonging During Atmospheric Science Studies and Its Influence on Career Trajectory. Presented at: *Auburn University College of Science and Mathematics Graduate Student Research Forum*, February 2023, Auburn, AL (Oral Presentation).
- Mikulak H.** and K.S. McNeal: Sense of Belonging During Undergraduate Studies in Atmospheric Science and the Influence on Career Goals. Presented at: *Fourth Symposium on Diversity, Equity, and Inclusion, American Meteorological Society*, January 2023, Denver, CO (Oral Presentation).
- Mikulak H.**, K.S. McNeal, and M. Partyka: Equity Differences and Climate Change Perceptions of Oyster Farmers in Alabama. Presented at: *2022 National Science Foundation Research Traineeship Annual Meeting*, October 2022, Virginia Polytechnic Institute and State University, Blacksburg, VA (Poster Presentation).
- McNeal K.S., **H. Mikulak**, and B. Ryan: Addressing Resiliency to Climate-Related Hazards and Disasters Through Data-Informed Decision Making. Presented at: *2022 National Science Foundation Research Traineeship Annual Meeting*, October 2022, Virginia Polytechnic Institute and State University, Blacksburg, VA (Poster Presentation).
- Mikulak H.** and K.S. McNeal: Belonging, 3 Minute Science Communication Video. Presented at: *Liquid Galaxy Display*, May 2022-April 2023, Ralph Brown Droughon Library, Auburn University, Auburn, AL (Video Presentation).
- Mikulak H.** and K.S. McNeal: Influence of Sense of Belonging During Undergraduate Studies on Career Goals in Atmospheric Sciences. Presented at: *Auburn University Climate Symposium and Teach In*, March 2022, Auburn, AL (Poster Presentation).
- Mikulak H.**, T. Mote, G. Henderson, and B. Barrett: Influence of Low-Frequency Atmospheric Teleconnection Patterns on Arctic Blocking Patterns. Presented at: *15<sup>th</sup> Conference on Polar Meteorology and Oceanography, American Meteorological Society*, May 2019, Boulder, CO (Poster Presentation).
- Wachowicz L., **H. Mikulak**, K. Mattingly, T. Mote, B. Barrett, and G. Henderson: Role of Extreme Anticyclone Blocking and Moisture Transport on Surface Mass Balance and Energy Budget of Greenland: A Case Study Approach. Presented at *15<sup>th</sup> Conference on Polar Meteorology and Oceanography, American Meteorological Society*, May 2019, Boulder, CO (Poster Presentation).
- Mikulak H.**, T. Mote, G. Henderson, and B. Barrett: Seasonal and Regional Variations in Arctic Blocking Patterns. Presented at: *American Association of Geographers Annual Meeting*, April 2019, Washington, DC (Poster Presentation).
- Wachowicz, L., **H. Mikulak**, K. Mattingly, and T. Mote: Relationships between episodes of extreme atmospheric blocking, moisture transport, and surface mass balance of Greenland. Presented at: *American Association of Geographers Annual Meeting*, April 2019, Washington, DC (Oral Presentation).
- Mikulak H.**, S. Kapnick, and S. Pascale: Examining the Impact of Temperature on Shipping Days of Corn, Soybeans, and Wheat. Presented at: *Cooperative Institute for Climate Science Internship End of Summer Symposium*, July 2017, Geophysical Fluid Dynamics Laboratory, Princeton, NJ (Oral Presentation).

**Mikulak H.**, and M. Anderson: Examining Atmospheric Conditions During Variations in Satellite Derived Sea Ice and Snow Coverage in the Arctic. Presented at: *University of Nebraska-Lincoln Spring Research Fair*, April 2017, Lincoln, NE (Poster Presentation).

**Mikulak H.**, and M. Anderson: Examining Atmospheric Conditions During Variations in Satellite Derived Sea Ice and Snow Coverage in the Arctic. Presented at: *16<sup>th</sup> Annual Student Conference, American Meteorological Society*, January 2017, Seattle, WA (Poster Presentation).

**Mikulak H.**, and M. Anderson: Variations in Satellite Derived Sea Ice and Snow Coverage in the Arctic. Presented at: *University of Nebraska-Lincoln Summer Research Symposium*, August 2016, Lincoln, NE. (Poster Presentation).

### **AWARDS, SCHOLARSHIPS, AND RECOGNITION**

US Geological Survey Climate Adaptation Sciences of Tomorrow Hydroclimate Mini-Grant	2023
NAGT Geoscience Education Research Division Researcher Spotlight	February 2023
Auburn University Department of Geosciences Graduate Advisory Board Research Grant Award	2022; 2023
WorldAware Employee Spot Award	November 2020
University of Georgia Outstanding Teaching Assistant Award	2019
University of Nebraska-Lincoln Ed Hirsch Scholarship	2016 - 2017
Dept. of Earth & Atmospheric Sciences Outstanding Undergraduate Award (Meteorology/Climatology)	2016
University of Nebraska-Lincoln Ruth Leverton Scholarship	2013 - 2017

### **CERTIFICATES**

CITI Human Subjects Basics Course	Inclusive STEM Teaching Project Course
CITI Records-Based Research Course	
Responsible Conduct of Research for Life Sciences	

### **SKILLS**

Microsoft Office (Word, Excel, PowerPoint)	GEMPAK
Python	IDV
R	IDL
ArcGIS	Fortran
Google Earth	

### **PROFESSIONAL AFFILIATIONS**

American Meteorological Society  
National Association of Geoscience Teachers  
European Science Education Research Association

### **NATIONAL AFFILIATIONS**

Phi Sigma Pi National Honor Fraternity  
Sigma Gamma Epsilon National Honor Society

### **INVOLVEMENT AND OUTREACH**

Auburn Geosciences Graduate Student Advisory Committee	August 2024 - Present
AMS 33 <sup>rd</sup> Conference of Education Climate Literacy and Communication Session Chair	January 2024/2025
Auburn Geosciences Department Graduate Student Peer Mentor/Program Organizer	August 2023 - Present
College of Science and Mathematics Convocation Event for Women Undergraduates in STEM	August 2023
Geography Student Organization Vice President	August 2023 - Present
AMS Board on Student Affairs Professional Development Committee Member	February 2023 - Present
Auburn University Geosciences for Inclusion, Diversity, and Equity Co-Chair	October 2022 - Present
Auburn Geosciences for Inclusion, Diversity, and Equity Committee Member	October 2022 - Present
Auburn University Earth Day Extravaganza Outreach Activity	April 2022, 2023, 2024
Geography Student Organization Member	August 2021
Virtual presentation to New Jersey High School students on opportunities in Meteorology	January 2021
Virtual presentation to Georgia Middle School students on employment in Meteorology	August 2020
UGA Gateway to Graduate School Summer Bridge Program Mentor	Summer 2018

Students of Earth and Atmospheric Sciences Member/Mentor	2015 - 2017
American Meteorological Society Fundraising Committee	2015 - 2016
Weatherfest Outreach Event for Children	April 2016
Presentation to 50 local Middle School students on the Antarctic Ozone Hole	April 2015
Nebraska Storm Chase Team Member	2013 - 2017
WxChallenge Participant	2015 - 2017
Phi Sigma Pi National Honor Fraternity Treasurer	2016 - 2017
UNL Swim Club Member	2013 - 2017
UNL Swim Club Treasurer	2015 - 2017
UNL Curling Club Member	2013 - 2017
UNL Curling Club Social Chair	2015 - 2017
UNL Curling Club Vice President	2016 - 2017
Scarlet Guard/Nebraska Alumni Association Member	2013 - Present
UGA Film Club Member	2018 - 2019